

App. No. 09/927,230

REMARKS

Claims 1-7, 9-35, 39-43, 45, 49-51, and 53 are pending in the application with claims 1, 24, 34, and 45 amended herein and claims 47 and 52 cancelled herein.

Claims 1-7, 9-23, 34, 35, 39-43, 45, 47, 49, and 53 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Chiang (U.S. Patent No. 6,878,402) in view of Werkhoven (US Publication No. 2003/0129826). Claims 24-33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Chiang in view of Werkhoven. Applicant requests reconsideration.

Applicant herein amends claims 1, 24, 34, and 45 incorporating method limitations associated with temperature alterations using a device exhibiting a thermoelectric effect, such as a thermoelectric heat pump. At least paragraph 25 of the present specification supports the added limitations. Pages 3-4 of the Office Action states that the Office refused to give a little or any weight to the limitations reciting a thermoelectric heat pump or devices exhibiting a thermoelectric effect. As such, the pending claims now set forth methods with limitations not previously considered by the Office with regard to patentability. Thus, no substantial evidence exists that the cited combination of references discloses or suggests every limitation of the pending claims. Applicant asserts that the pending claims are patentable.

Claim 45 is further amended herein to incorporate the subject matter of previous claims 47 and 52, along with other limitations. Support for the

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limitations concerning temperature differences may be found in paragraphs 23 and 28 of the present specification.

Pages 3-4 of the Office Action also allege that the present specification indicates any means can be used to remove or add heat. While the present specification supports a broad scope, it also recognizes certain advantages of particular heating and cooling methods. At least paragraphs 26, 31, and 40 discuss several advantages of methods such as those set forth in amended claims 1, 24, 34, and 45. Advantages include the ability to control temperature by selectively heating or cooling with the same device such that precursors are chemisorbed or reacted at optimum temperatures. Since the timing of temperature alterations is particularly significant in ALD, the claimed methods are very advantageous in such a setting given the quick changes in substrate temperature achievable. In all, the advantages of the claimed methods may yield increased deposition rates and/or increased quality of deposited materials.

Pages 3-4 of the Office Action also alleges that the specification teaches another heating means in addition to a thermoelectric heat pump and thus, the claimed methods do not afford any simplification. Such a conclusion ignores the express teachings of the present specification. Discussion of another heating means occurs in paragraph 27 and several of the claims of the present specification and pertains to use of background heat. Even in the case of background heat, simplification still may occur

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since a background heater may exist in addition to a primary heating means replaced by a THP, which may also replace a primary cooling means.


Applicant herein establishes adequate reasons supporting patentability of claims 1-7, 9-35, 39-43, 45, 49-51, and 53 and requests allowance of all pending claims in the next Office Action.

Applicant previously filed an IDS and Form PTO-1449 on September 26, 2006. Applicant has not received the initialed copy of the form indicating consideration of the cited references. The Office's Image File Wrapper indicates that the Office received the subject IDS. Applicant requests return of the initialed form with the next Office Action.

Respectfully submitted,

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By: _____


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